

Delaware Department of Transportation  
**QUESTIONS AND ANSWERS**  
**DOT2007-PORT\_DMS**  
**PORTABLE DYNAMIC MESSAGE SIGNS**  
**Tuesday, December 8, 2020**

Yellow Highlight = Updated Answer

Q #	Question	Answer
36	Sec 17.6/D/vi States: The Photoelectric System shall be capable of distinguishing between fog and nighttime light inputs. Is this to be a "Photocell" or a "Optical Fog Sensor" (OFS)?	The system is to be capable of distinguishing between fog and nighttime light inputs.
35	Sec 11.0 States: The bidder shall submit with their bid, a list and price of recommended spare parts.... What format should the pricing be submitted, there is no pricing sheet for parts, only the units.	Parts are to be submitted in an easy to read chart with the associated per piece pricing.
34	Sec 9.2 States: Submit certification from manufacturers that ensure essential equipment provided will be carried in factory stock for a period of at least ten (10) years. Does the "equipment" need to be in stock, or the just recommended service parts?	Essential equipment should be in stock for 10 years.
33	Your spec states Maximum Dimensions: the dimensions listed do not apply to any mfg. of this type of equipment? Travel Position Length; 156" Height; 104" Deployed Position; 143" Length, 145" in height. The Cabinet size is 59x104. Are you asking mfg. to design you a unique solution that does not adhere to MUTCD?  19.7 Trailer states 1. Maximum Dimensions; ..... similar issue.	Yes, we are requesting a system that meets our specifications. Our specifications adhere to the MUTCD and the vendor should provide a standard cabinet and trailer size to meet sign display requirements.
32	Your spec states, " Design & Furnish a Light Emitting Diode (LED) Portable Dynamic Message Sign providing a full matrix color display for traveler information and freeway work zone applications. The PDMS matrix shall be sized sufficient to provide display of three lines of eight characters, with a nominal character size of 18 inches in a standard 5x7 font, with a min of four LED's per pixels. There are different signs available, but do not meet your requirements, how should we submit?	Provide a sign display that meets the requirements for color, character size, spacing, and pixel density.

31	Your spec states, " 4. Lighting protection shall be supplied to the load side of the sign system distributed power lines to withstand multiple surges in excess of 600 volts. " The use of a lighting protection system may not protect anything, can we remove this from the spec?	No, the specification asks to provide a lightning protection system.
30	Your spec states, " 1. all wiring from power sources to portable DMS equipment shall use locking cable connectors." What NEMA rating? Do you want a twist lock plug into a battery charger?	Provide any option that lock the cables in place.
29	Your spec states, " 12. be able to rotate independently of the sign panel and be able to tilt from 0 degrees to 40 degrees." Tilt and solar is not recommended.  Would the state consider allowing the mfg. to supply fixed mounted solar?	No, the specification asks to provide a tilt and rotate option to the solar panels. If the vendor suggests any enhancements or modifications to the specification, that will improve performance of the sign, they should be noted in the vendor proposal.
28	Your spec states, "3. Be rated at 1800 amp hours." If the amp hour per battery is 200amps, than that is requesting 9 batteries. That would drastically increase the weight of the trailer. Please advise.	Design a system rated at 1800 amp hours.
27	Your spec states, The trailer axle shall have electric brakes at each wheel. The battery for the emergency break away shall be wired.... Have a solar powered trickle charger to keep the battery fully charged when not in use. " The Breakaway system is charged by the tow vehicle wiring harness there is NO solar panel in this system, was this statement overlooked?	The specifications require a separate electric braking system powered by the solar array and onboard batteries.
26	Your Spec States, "All wiring shall be contained within tubular framing...wiring should not be directly lashed to the frame. " What does lashed to the frame mean?	All wiring should be run through the frame or conduit where possible.
25	Your Spec States c. Vendor must submit detailed design drawing for approval. Should that be included in the bid or as a final submission one the bid is awarded? What size barrels and bases are used?	This should be submitted with the bid proposal package.  If the submitted system doesn't include an auxiliary storage system, capable of storing 6 standard traffic drums/barrels with tire ring secure bases, then we need a separate solution/design to accommodate and include this in your proposal. Typical dimensions for drums are 49"Hx24"W with a weight of about 8lbs. Tire rings have a typical diameter of 22.5" (inside) and 34" (outside) with a weight of 24lbs.

24	The spec states Safety Chains; Tow 3' long, galvanized steel 1/4 inch, with 2,500lbs slip safety hooks. 3/8" galvanized steel chains are recommended.	Provide a chain that meets the specifications, or if the vendor suggests any enhancements or modifications that will improve performance of the system, they should be noted in the vendor proposal.
23	The spec states, " provide ability to mount a camera to the top of the sign panel mast. " We recommend a basic push up pole mast to be mounted on the back of the display, would this be acceptable for the spec?	Vendor should provide their solution to mounting a camera to the PDMS as part of their proposal.
22	The dimensions states for length, width, traveling height, etc do not apply to full size interstate message signs. Does the state wish to change the specs or are they requesting we redesign a new system exclusively for this bid?	Alternative trailer sizes are acceptable such that they meet Delaware Vehicle Code requirements and meet the criteria for wind loading as described in the specifications.
21	The spec states, " a min of three commercially available photo electric sensors? Did you mean to state two photocells?	Two commercially availability photo electric sensors will be sufficient.
20	The spec states, " photo electric system shall be capable of distinguishing between fog & nighttime lighting inputs? No one offers this to our knowledge. What are you asking for here?	Photo electric system shall be capable of brightening or dimming the sign display such that it is visible during differing ambient light conditions.
19	The spec states, " local control shall be with a laptop computer connected to the port furnished in the field controller." Can this statement be eliminated?	No, we are looking for a connection for a laptop computer to connect into the system for field diagnostics if needed.
18	The spec states, " have an RS-232 port. Can this be eliminated from the spec?	Provide a list of all connections that the PDMS board supports and it will be reviewed for suitability.
17	The spec states, " as part of the proposals submittal, a complete schematic of the LED display power, driver, and dimming circuits shall be provided for approval. That is proprietary to the mfg. I believe the state is requesting a wiring diagram here and not the schematics, do I have that right?	The Department suggests that you mention the schematic is proprietary, provide a wiring diagram and if vendor is chosen we can discuss further.
16	The spec states, " removal of any display module shall not affect the operation of the remaining modules, and that is correct if a message is displayed. We suggest daisy chain charactercards together, is that what the state wants?	The removal of any display module shall not affect the operation of the remaining modules and should be wired accordingly to provide this solution. If the vendor suggests enhancements or modifications that will improve performance of the sign, they should be noted in the vendor proposal.
15	The spec states, " Equip the sign display with a shatter-resistant cover that is optically clear, high impact, scratch resistant, low glare, and ultraviolet stabilized polycarbonate plastic (i.e., Lexan with stabilizer or approved equal) of not less than 3/16 of an inch in thickness and is manufactured from virgin materials by a major manufacturer." Is 0.50 acceptable?	0.5" is more than 3/16", so yes, it's acceptable.

14	The spec states, "Border around the sign housing (referred to as 'legend' in NTCIP terms) on all four edges shall be within a range of 6 to 12 inches. " We do not recommend this, as this could present shipping issues as it exceeds height clearances.	Please provide a system that matches the specifications. If the vendor suggests enhancements or modifications that will improve performance of the sign, they should be noted in the vendor proposal.
13	The Spec states, " The dead load shall consist of the total weight as installed of the PDMS enclosure and appurtenances. The point of application of weights of the individual items shall be their representative centers of gravity. Ice load shall be as per AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaries, and Traffic Signals except that ice load shall be applied to all sides and top surfaces of the PDMS enclosure simultaneously.." Is this correct?	Yes
12	The spec states, " the Sign panel housing shall be painted or powder coated Highway Safety Orange in conformance with Federal Standards, on the sides and back. The front sign face shall be flat black." Is this correct?	Yes
11	The spec states the PDMS matrix shall be sized sufficient to provide display of three lines of 8 characters. Is the state requesting a 3 line display or a full matrix display? For the .125 inch thick cabinet spec, would a spec of .063 be acceptable? Regarding the reference of welds, is using rivet technology sufficient?	The Department is requesting a full matrix display capable of providing 3 lines of at least 8 characters. 0.063 would not meet specifications and would not be acceptable. Riveted system would not meet the specifications and would not be acceptable.
10	Training and Technical assistance. Is the state requesting local Dealers do training on this equipment, or is the state requesting to work directly with the manufacturer?	The State is requesting training be made available from the selected supplier.

**Wednesday, November 25, 2020**

9	Will the state award this as an all or nothing contract or could each line item be awarded to different vendors?	Please refer to Section 4.6 and Section 5.
8	Section 18.0 Portable Dynamic Message Sign – Type 2 – Freeway, Full Matrix, Color  Would the state accept modifying their specifications to approximately 65’’ X 105’’ which does 3 lines of 8 characters, with a character size of 13.5’’?	No, please follow the specifications.

7	<p>Section 17.5.d / 18.7.5.d / 19.7.5.d -Fenders : 16 Gauge Rolled Steel with non-skid upper surface</p> <p>Would the state accept as an equivalent fenders that are made of a durable composite material that can easily be replaced if damaged and are rated at 250 lb. for standing?</p>	If any materials submitted exceed the listed requirements they should identified in the vendor proposal.
6	<p>Section 17.5 / 18.5 / 19.5 – The LEDs that make up the display modules shall be high luminous intensity T-1 ¾” type manufactured by a reputable manufacturer.</p> <p>This refers to old style thru-hole LED technology, would the state accept SMT (Surface Mount) technology as an equivalent?</p>	If any materials submitted exceed the listed requirements they should identified in the vendor proposal.
5	<p>Section 17.7.4.a / 18.7.4.a / 19.7.4.a – Battery Box : #14 Gauge Steel, Hinged Telescoping Door Support</p> <p>Would the state accept as an equivalent battery boxes that are made of durable polyethylene composite material which are UV stabilized to prevent fading and cracking?</p>	If any materials submitted exceed the listed requirements they should identified in the vendor proposal.
4	<p>Section 17.2 – The Vendor shall submit fabrication and shop drawings and design calculations for all PDMS enclosures, ventilation, and mounting, sealed by a Professional Engineer licensed in the state (s) where the sign (s) is to be installed.</p> <p>Would the state accept as an equivalent a Professional Engineer licensed in the state where the signs are to be manufactured?</p>	Yes, the state will accept, as an equivalent, a Professional Engineer licensed in the state where the signs are to be manufactured.

3	<p>Type I - Please clarify the trailer length requirement.</p> <ul style="list-style-type: none"> <li>•The DelDOT description of the sign (Pg. 32 / 17.1) states that the size be "...sufficient to provide display of three (3) lines of (8) characters, with a nominal character size of 18 inches..."</li> <li>•The description of the trailer states that the maximum dimension for the length is to be 122" nominal (Pg. 37 / 17.7 – 1. a.). - This appears to be the same trailer dimensions called for on the Type III PDMS , which has a smaller display and typically would be mounted to a smaller trailer. (See Pg. 53 / 19.7 1.a. for comparison)</li> <li>•Should the Type I PDMS feature a trailer length of 180"? Full sized signs on smaller trailers may be unstable in high (90 mph + 1.3 gusts) winds (Pg. 33 – 3rd Ph.)</li> </ul>	<p>All PDMS types call for the same nominal length of trailer and do not differ by size of the sign. If your manufactured solution is a larger trailer dimension for Types I &amp; II and respectively smaller for the Type III then please submit your standard in your proposal and it will be reviewed by The Department. Alternative trailer sizes are acceptable such that they meet Delaware Vehicle Code requirements and meet the criteria for wind loading as described in the specifications.</p>
2	<p>Please confirm or clarify the keyboard requirement</p> <ul style="list-style-type: none"> <li>•All three DelDOT "Type" variations call for a "Tactile feedback" keyboard and state that a membrane-type keyboard is not acceptable (See Type-1, Pg. 36 / 17.64. a.), but that "a hand-held terminal may be used."</li> </ul>	<p>A rugged tactile style keyboard should be provided. If a specific vendor's solution is a membrane-type keyboard then The Department will review the system as a whole and make our decision based on the relation to the specifications. The Department recommends you submit your available product and it will be reviewed.</p>
1	<p>Can you define "remote" and "locally" in regards to the sign messaging? My understanding of remote is that the sign message is capable of being updated through the cloud. Is this correct?</p>	<p>Locally means that a user can program the board directly using the control panel that is integral to the unit. Remote means using a customer's private network, such a user installed cdma modem (Sierra Wireless MP 70 or RV50X, etc.) the board can be programmed using an NTCIP ATMS compliant software such as OPENTMS software</p>